Claims

[c1]   1. A data compression/decompression device, suitable for compressing/decompressing a data transmitted between a data generation device and a data storage device, comprising:

an input buffer, for buffering and storing said data for input;

an output buffer, for buffering and storing said data for output;

a data compressor/decompressor, coupled to said output buffer, for compressing/decompressing said data for input and storing said data for output in said output buffer; and

a controller, coupled to said input buffer, said output buffer and said data compressor/decompressor, for controlling data transmission with said data generation device and said data storage device, controlling compressing/decompressing said data, and managing an address mapping table which is the cross reference between an access address transmitted from said data generation device and a physical address of storing the data in said data storage device.

[c2]   2.The device of claim 1, wherein said controller includes:

a data generation control unit, for controlling data transmission with said data generation device;

a data storage control unit, for controlling data transmission with said data storage device;

a data extracter, for obtaining said data from said input buffer, extracting a compressing/decompressing portion of said data , and sending said compressing/decompressing portion of said data to said data compressor/ decompressor; and

a main control unit, for coordinating and controlling said data generation control unit, said data storage control unit, and said data extracter, and for managing said address mapping table.

[c3]   3.The device of claim 1, wherein said data generation device is at least one of a host, a laptop computer, a microprocessor, an interface card and a router.

[c4]   4. The device of claim 1, wherein said data storage device is at least one of a hard disk drive, a floppy disk drive, a CD-RW drive, a magnetic-optical device, a digital video recorder and a flash memory card.

[c5]   5. A system applying a data compression/decompression device, comprising:

a data storage device, having a data transmission inter-

face;

a data generation device, accessing a data in said data storage device via said data transmission interface; and

a data compression/decompression device, coupled to said data storage device and said data generation device via said data transmission interface, for compressing/ decompressing said data transmitted between said data storage device and said data generation device and managing an address mapping table which is the cross reference between an access address transmitted from said data generation and a physical address of storing said data in said data storage device.

[c6]   6. The device of claim 5, wherein said data compression/ decompression device includes:

an input buffer, for buffering and storing said data for input;

an output buffer, for buffering and storing said data for output;

a data compressor/decompressor, coupled to said output buffer, for compressing/decompressing said data for input and storing said data for output in said output buffer; and

a controller, coupled to said input buffer, said output buffer, and said data compressor/decompressor, for controlling data transmission with said data generation

device and said data storage device, controlling compressing/decompressing said data, and managing said address mapping table.

[c7]   7.The system of claim 6, wherein said controller includes:

a data generation control unit, for controlling data transmission with said data generation device;

a data storage control unit, for controlling data transmission with said data storage device;

a data extracter, for obtaining said data from said input buffer, extracting a compressing/decompressing portion of said data , and sending said compressing/decompressing portion of said data to said data compressor/decompressor; and

a main control unit, for coordinating and controlling said data generation control unit, said data storage control unit, and said data extracter, and for managing said address mapping table.

[c8]   8.The system of claim 5, wherein said data generation device is at least one of a host, a laptop computer, a microprocessor, an interface card and a router.

[c9]   9. The system of claim 5, wherein said data storage device is at least one of a hard disk drive, a floppy disk drive, a CD-RW drive, a magnetic-optical device, a digital

video recorder and a flash memory card.

[c10]   10. The system of claim 5, wherein said data transmission interface is one of an IDE interface, a 1394 interface, a SCSI interface, a serial ATA interface, a serial attached SCSI interface, a PCMCIA interface and a USB interface.